



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/924,976 | 08/08/2001 | Tyrone A. Johnsen | B05555B-AT1-USA | 3143 |

7590 03/06/2003
Eugene V. Feldman, M/S 110-6
Hamilton Sundstrand
4747 Harrison Avenue
PO Box 7002
Rockford, IL 61125-7002

EXAMINER

SCHEUERMANN, DAVID W

ART UNIT PAPER NUMBER

2834

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/924,976

Applicant(s)

JOHNSEN, TYRONE A.

Examiner

David W. Scheuermann

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-10 and 12-16 is/are rejected.
- 7) ☒ Claim(s) 3, 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 6, 8, 9, 10, 12, 13, 14, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schweder et al., US 4301386 in view of Cohen, US 397340. Schweder et al. disclose stator 2 having a plurality of windings 4, a rotor core comprising laminae 13', 17' and 20' as shown in figure 2, with a cooling passage formed within the laminae. Schweder et al. do not expressly disclose a hollow shaft having an inlet for cooling fluid. In the similar field of dynamoelectric cooling, Cohen discloses using a hollow shaft to form an entrance path for cooling fluid into the rotor core for the purpose of providing cooling fluid to the rotor through a shaft. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the dynamoelectric machine of Schweder et al. to provide a cooling path through the shaft and into the core. One of ordinary skill in the art would have been motivated to do this for any of treating the cooling fluid outside the machine, increasing the centrifugal pumping efficiency and permitting external control of cooling flow rate.

Re claims 2 and 10 note that adjacent laminations 17' and 20' are sandwiched between laminations 13' to form a "zigzag" passageway.

Art Unit: 2834

Re claims 4 and 14 official notice is taken that edge welding, adhesive bonding and mechanical fastening are well known in the art for bonding laminations.

As to claims 6, 8, 14, and 16 a dynamoelectric machine can function either as a generator or motor.

Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schweder et al. in view of Cohen as applied to claims 1 and 9 above, and further in view of Cooper. The combination of Schweder et al. and Cohen disclose the invention as set forth above. Schweder et al. and Cohen do not expressly disclose use of the cooling structure on a variable frequency generator. Cooper discloses cooling the rotor on a variable frequency generator, for the purpose of keeping the generator of variable frequency cool. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to apply the cooling structures of Schweder et al. in view of to a variable frequency generator. One of ordinary skill in the art would have been motivated to do this keep the variable frequency generator cool.

Allowable Subject Matter

Claims 3 and 11 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kliman et al show a motor with lamination holes staggered to

Art Unit: 2834

enhance cooling. Collins shows cooling fluid flowing in a hollow shaft and expelled through a rotating rotor for the purpose of cooling the rotor and heating the fluid.


Richards shows a cooling passageway in a dynamoelectric machine with a "zigzag" passage. Washburn discloses sides of each plate a, exposed to cooling fluid which enters from an opening b about shaft k.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David W. Scheuermann whose telephone number is (703) 308-9637. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

dws
February 25, 2003



NESTOR RAMIREZ
SUPERVISOR
FEB 25 2003